

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference P 8301	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/NO99/00366	International filing date (<i>day/month/year</i>) 06.12.1999	Priority date (<i>day/month/year</i>) 10.12.1998
International Patent Classification (IPC) or national classification and IPC ₇ E21B 33/127, E21B 23/06		
Applicant Reslink AS et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 19.06.2000	Date of completion of this report 15.11.2000
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. 08-667 72 88	Authorized officer Christer Bäcknert / MRO Telephone No. 08-782 25 00

I. Basis of the report**1. With regard to the elements of the international application:***

- ☒ the international application as originally filed
- ☐ the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the claims:
pages _____, as originally filed
pages _____, as amended (together with any statement) under article 19
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the drawings:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language English which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☒ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheet/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2 (c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item I and annexed to this report.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	<u>1-16</u>	YES
	Claims		NO
Inventive step (IS)	Claims	<u>1-16</u>	YES
	Claims		NO
Industrial applicability (IA)	Claims	<u>1-16</u>	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

The invention relates to a device in a tool for setting an inflatable packer within an annulus between a pipe string and a borehole wall in a well for production of hydrocarbons. The main object of the invention is that a packer element shall be inflated by means of a hardenable substance and that the inflation pressure should be moderate. Where the packer element is inflated by well fluid, the packer is subjected to high loads.

According to the claims, the invention provides a tool that comprises a sleeve element (4) with three housing elements outside of it. The packer element extends between two of the housing elements (5,6). The third housing (7) is formed with three chambers, one of which receives the well fluid at packer inflation time. The chambers are further formed in such a way that when well fluid is supplied to the first chamber, it expands and pulls part of the housing wall along with it.

Partitions are formed between the sleeve and the housing in such a way that when the first chamber expands, the other chambers decrease in volume. They are initially filled with the hardenable substances, which substances are pressed out of the chambers and into the packer element when well fluid is introduced into the first chamber. Due to the fact that there are more chambers containing the hardenable substances than chambers receiving well fluids, the packer element is inflated at a lower pressure than the well fluid pressure.

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Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: V.

The cited documents, e.g. US3575238 A and US3750750 A, shows prior art tools for setting an inflatable packer. In this prior art, all of the well fluid pressure is supplied to the annulus between the inflatable packer element and the pipe string in the well. There is a difference between the claimed invention and the prior art documents in that the well fluid pressure is divided between a plurality of chambers containing the hardenable material.

There is nothing in these documents to suggest or hint a person skilled in the art that providing more chambers for the hardenable material than for the well fluid could solve the problem of reducing the inflation pressure inside the packer element. Further, it is considered that the claimed invention constitutes a solution to the stated problem. Consequently, the invention according to claims 1-16 is considered to meet the criteria of novelty, inventive step and industrial applicability.